

Business Intelligence, Graduate Certificate

~~This program consists of a six-course sequence, comprising four required courses and two elective courses. Elective courses may be taken in any of five sub-tracks: Business Intelligence Infrastructure, Digital Strategies, Predictive Analytics, Prescriptive Analytics, or Advanced Computation. Students are responsible for any prerequisites to these classes. The list of courses as follows:~~

Program Description

The Graduate Certificate in Business intelligence (BI) prepares students to support better business decision-making by providing internal data and external data in a useful and usable format. Using BI, decision makers are able to examine the value of business processes and products while watching for competitive opportunities in the marketplace. BI technologies provide historical, descriptive, predictive, and prescriptive views of business operations. The BI Certificate blends analytics and information technology in a unique program during which students work on industry datasets and learn to appreciate the difficulties of large-scale, unstructured data as well as the need for nuanced solutions.

This 12 credit hour certificate program also counts toward the 30 credit hour Master of Science in Information Systems and Technology degree program requirements. Students may choose to combine this certificate with other courses and/or certificates to obtain the Master of Science in Information Systems and Technology degree.

Admission Requirements

Applicants must meet general University of Missouri-St. Louis Graduate School admissions requirements.

Certificate Requirements

All course prerequisites and all course waivers are applicable. Substitute courses may be approved by the appropriate department chairperson and the Director of Graduate Business Programs.

Required Courses (12 hours)

INFSYS 6833	Decision Support Systems for Business Intelligence	3
INFSYS 6849	Data Warehouse Design and Implementation⁺	3
or INFSYS 6860	Data Integration	
INFSYS 6851	Practicum in Business Intelligence	3
SCMA 6345	Business Analytics and Data Mining	3

Areas of Concentration

~~Choose two classes from any of the five tracks below. Both classes must be from the same concentration~~

Business Intelligence Infrastructure

INFSYS 6806	Managerial Applications of Object-Oriented Technologies	
INFSYS 6808	Advanced Object-Oriented Programming for Business	
INFSYS 6840	Information Systems Analysis	
INFSYS 6847	Project Management	
INFSYS 6848	Knowledge Management and Business Intelligence	

INFSYS 6850	Information Systems Design
INFSYS 6860	Data Integration²
INFSYS 6891	Seminar in Information Systems (Topic subject to approval)
Digital Strategies	
MKTG 5721	Digital Marketing Strategies and Measurement
MKTG 5795	Seminar in Marketing
Predictive Analytics	
SCMA 5312	Advanced Statistical Methods for Management Decisions
ECON 5110	Topics in Applied Econometrics
ECON 5120	Advanced Topics in Time Series Econometrics
ECON 5130	Advanced Topics in Business and Economic Forecasting
Prescriptive Analytics	
SCMA 5312	Advanced Statistical Methods for Management Decisions
SCMA 5354	Simulation for Managerial Decision Making
SCMA 6330	Business Logistics Systems

SCMA 6331	Logistics and Supply Chain Operational Modeling
SCMA 6350	Management Science Methods
SCMA 6395	Seminar in Logistics and Operations Management

Advanced Computation

CMP SCI 4300	Introduction to Artificial Intelligence
CMP SCI 4340	Introduction to Machine Learning
CMP SCI 5320	Evolutionary Computation
CMP SCI 6340	Genetic Programming

¹ ~~INFSYS 6849 is required for students pursuing the Business Intelligence Infrastructure track. These students may take INFSYS 6860 as an elective.~~

² ~~INFSYS 6860%7C is required for students pursuing the Predictive Analytics track. These students may take INFSYS 6849%7C as an elective.~~

Required Courses

INFSYS 6830	Data Programming for Business Intelligence	3
INFSYS 6833	Decision Support Systems for Business Intelligence	3

Electives

Choose two of the following courses:		6
INFSYS 6849	Data Warehouse Design and Implementation	

INFSYS 6851	Practicum in Business Intelligence
INFSYS 6860	Data Integration
INFSYS 6862	Artificial Intelligence Applications for Business and Cybersecurity
SCMA 6345	Business Analytics and Data
SCMA 6350	Management Science Methods
Total Hours	12

The required courses may be substituted with other courses with the approval of the Chair of the Information Systems and Technology Department.

Rationale

Business Intelligence skills are ranked among the top technology skills that will be in demand over the next decade. This new certificate covers essential components of descriptive, predictive, and prescriptive analytics, along with data management skills thereby making it attractive to a wide audience of students. This certificate program is part of broader efforts within the department of Information Systems and Technology to create flexible pathways for students to complete the full Master of Science in Information Systems and Technology (MSIST) by transferring all courses taken within Graduate Certificates into the MSIST. This restructuring makes the graduate programs attractive to prospective students who may not be ready to commit to a full degree while providing them with the flexibility to combine certificates toward a student centered MSIST degree. These efforts are in line with the College of Business Administration, Graduate School, the University of Missouri-St. Louis, and the University of Missouri System strategic initiatives. This certificate can also be utilized by the University of Missouri (Columbia) as well as the National Geo-spatial Intelligence Agency (NGA) in separate ongoing efforts aimed at increasing collaboration across the four UM campuses and providing reskilling/upskilling opportunities to NGA employees